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SCHWABE, WILLIAMSON & WYATT, P.C.
PACWEST CENTER, SUITES 1600-1900
1211 SW FIFTH AVENUE
PORTLAND, OR 97204

EXAMINER	
BLACKMAN, ANTHONY J	

ART UNIT	PAPER NUMBER
2676	4

DATE MAILED: 09/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/036,811	VAN KONINGSVELD, RICHARD	
	Examiner	Art Unit	
	ANTHONY J BLACKMAN	2676	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *31 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-79* is/are pending in the application.

4a) Of the above claim(s) *31-38 and 66-79* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-8, 13-18, 20-26,39-42,44-46, 51-56 and 58-655* is/are rejected.

7)☐ Claim(s) *5,9-12,19,27-30,43,47-50 and 57* is/are objected to.

8)☐ Claim(s) *31-38 and 66-79* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/02; 8/03*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1-4, 6-8, 17-18, 20-23, 25-26, 39-46 and 55-61 and 63-65 are rejected under 35 U.S.C. 102(e) as being anticipated by ANWAR, US Patent No. 6,750,864.

4. As per claims 1 and 39, examiner interprets ANWAR disclose the following features and limitations as claimed;

A processor implemented data processing (column 17, lines 14-21, column 6, lines 62-67) method comprising:

identifying a first plurality of regions within a first recursively partitioned/nested geometric structure (figures 23 –shows a decision tree/recursive partitioning, column 37, lines 31-50 and column 31, lines 14-50) that correspond to a first plurality of normalized multi-dimensional data of a first normalized multi-dimensional data space (column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53),

,the first recursively partitioned/nested geometric structure being corresponding to the first normalized multi-dimensional data space (column 13, lines 6-16 and column 16, lines 9-17);

determining corresponding first graphing values for said first corresponding regions within said first recursively partitioned/nested geometric structure determined for said

first normalized multi-dimensional data of said first normalized multi-dimensional data space (column 13, lines 6-16 and column 16, lines 9-17);
associating corresponding first visual attributes with said first corresponding regions within said first recursively partitioned/nested geometric structure, based at least in part on corresponding ones of said determined first graphing values (column 13, lines 6-16 and column 16, lines 9-17); and displaying said first recursively partitioned/nested geometric structure(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53),
visually differentiating said first corresponding regions based at least in part on corresponding ones of said associated first visual attributes (column 1, lines 21-42 and column 16, lines 9-17) and at least one processor coupled to the storage medium to execute programming instructions (column 17, lines 14-21, column 6, lines 62-67)

5. As per claims 2 and 40, ANWAR meets limitations and features of claims 1 and 39, including, wherein each of said first normalized multidimensional data of said first normalized multi-dimensional data space comprises a plurality of relative coordinate values(column 20, lines 35-44), and the method further comprises constructing a polynary string to represent each of said first normalized multidimensional data and its corresponding one of said first regions within said first recursively partitioned/nested geometric structure in accordance with the relative coordinate values (column 13, lines 6-16 and column 16, lines 9-17).

6. As per claims 3 and 41, ANWAR meets limitations of claims 2 and 40, wherein said constructing of a polynary string to represent each of said first normalized multi-dimensional data and its corresponding one of said first regions within said first recursively partitioned/nested geometric structure in accordance with the relative coordinate values comprises selecting a symbol/(an arbitrary variable) as the next symbolic member of the polynary string based on which of the relative coordinate values is the current highest relative coordinate value (column 2, line 61-column 3, line 9, column 7, lines 6-15 and 46-55).

7. As per claims 4 and 42, ANWAR meets limitations of claims 3 and 41, wherein said constructing of a polynary string to represent each of said first normalized multi-dimensional data and its corresponding one of said first regions within said first recursively partitioned/nested geometric structure in accordance with the relative coordinate values further comprises reducing the highest relative coordinate value in by an amount (G), upon each selection, and reducing the amount (G) after each reduction (these well-0known features are present in recursive partitioning/decision tree applications - figures 23 –shows a decision tree/recursive partitioning, column 37, lines 31-50 and column 31, lines 14-50).

8. As per claims 6 and 44, ANWAR meet limitations of claims 2 and 40, wherein said determining of corresponding first graphic values comprises determining frequencies of occurrence of the various polynary strings of said first normalized

multi-dimensional data (column 16, lines 8-31), and assigning/associating the determined frequencies of occurrence to the corresponding first regions within the first recursively partitioned/nested geometric structure as the determined first graphing values of the corresponding first regions (column 16, lines 8-31).

9. As per claims 7 and 45, ANWAR meets limitations of claims 1 and 39, wherein said determining of corresponding first graphic values comprises assigning first output values corresponding to the first normalized multi-dimensional data as the determined first graphing values of the corresponding first regions within the first recursively partitioned/nested geometric structure (column 16, lines 8-31).

10. As per claims 8 and 46, ANWAR meets limitations of claims 7 and 45, wherein said determining of corresponding first graphic values further comprises computing said first output values (column 16, lines 8-31).

11. As per claims 17 and 55, ANWAR meets limitations of claims 1 and 39, wherein said associating comprises for each of said first regions (column 16, lines 9-17), associating a selected one of a plurality of symbols with the region based at least in part on the determined graphing value of the region (column 16, lines 9-32).

12. As per claims 18 and 56, ANWAR meets limitations of claims 1 and 39, wherein said associating comprises for each of said first regions (column 16, lines 9-17),

associating a selected one of a plurality of color attributes with the region based at least in part on the determined graphing value of the region (column 16, lines 9-32).

13. As per claims 20 and 58, ANWAR meets limitations of claims 1 and 39, wherein said associating comprises for each of said first regions(column 16, lines 9-17), associating a selected blending of a plurality of colors with the region based at least in part on contributions to the determined graphing value of the region (column 22, lines 23-37).

14. As per claims 21 and 59, ANWAR meets limitations of claims 1 and 39, wherein said first regions correspond to all constituting regions of the first recursively partitioned/nested geometric structure (figures 23 –shows a decision tree/recursive partitioning, column 37, lines 31-50 and column 31, lines 14-50), said first normalized multi-dimensional data are values of independent variables of a function(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53), and said first graphing values are corresponding values of a dependent variable of the function(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53).

15. As per claims 22 and 60, ANWAR meets limitations of claims 1 and 39, wherein the method further comprises identifying a second plurality of regions within a second recursively partitioned/nested geometric structure (figures 23 –shows a decision

tree/recursive partitioning, column 37, lines 31-50 and column 31, lines 14-50) that correspond to a second plurality of normalized multi-dimensional data of a second normalized multi-dimensional data space(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53), the second recursively partitioned/nested geometric structure being corresponding to the second normalized multi-dimensional data space(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53); determining corresponding second graphing values for said second corresponding regions within said second recursively partitioned/nested geometric structure determined for said second normalized multi-dimensional data of said second normalized multi-dimensional data space(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53),; associating corresponding second visual attributes with said second corresponding regions within said second recursively partitioned/nested geometric structure, based at.least in part on corresponding ones of said
determined second graphing values(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53); and displaying said second recursively partitioned/nested geometric structure, visually differentiating said second corresponding regions based at least in part on corresponding ones of said associated second visual attributes (column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53).

16. As per claims 23 and 61, ANWAR meets limitations of claims 22 and 60, wherein said first and second recursively partitioned/nested geometric structures are displayed in a manner such that both recursively partitioned/nested geometric structures are visible concurrently (figures 4a-4c and column 38, lines 22-56).

17. As per claims 25 and 63, ANWAR meets limitations of claims 22 and 60, wherein said first and second normalized multidimensional data are values of first and second input variables (column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53).

18. As per claims 26 and 64, ANWAR meets limitations of claims 22 and 60, wherein said first normalized multi-dimensional data are values of input variables(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53), and said second normalized multi-dimensional data are values of corresponding output variables(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53).

19. As per claim 65, ANWAR meets limitations of claim 39, including, wherein said apparatus is a selected one of a palm sized processor based device, a notebook computer, a desktop computer, a set-top box, a single processor server, a multi-processor server, and a collection of coupled servers (the at least underlined feature is disclosed : column 40, lines 22-36 and figure 25).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

21. Claims 13-16, 24, 51-54 and 62 are rejected under 35 U.S.C. 103(a) as being unpatentable over ANWAR, US Patent No. 6,750,864 in view of TESSLER, US Patent No. 6,259,451.

22. As per claims 13 and 51. The method of claims 2 and 40, wherein the method further comprises receiving a first zooming specification comprising one or more of said polynary string constituting symbols (column 14, lines 30-38 and 42-67); however, does not expressly teach the following features, " excluding a first subset of said first regions based at least in part on said received first zooming specification; and repeating said displaying for the remaining ones of said first regions in an expanded manner". GARVEY, US Patent No. 6,476,814 describes methods of analyzing tree structures on computer displays suggests (column 4, lines 13-36) for the following features: excluding a first subset of said first regions based at least in part on said received first zooming specification; and repeating said displaying for the remaining ones of said first regions in an expanded manner. It would have been obvious to one skilled in the art at the time of the invention to use the computer display graphical tree analysis scheme

using the expansion and contraction and zooming means with the "+" and "-" means for a subtree of GARVEY in order to modify the zooming and expansion modes for the computer-displayed decision-tree graphical analysis invention of ANWAR because the zoom manipulations of GARVEY provide greater user manipulation of the displayed data for enhanced data analysis.

23. As per claims 14 and 52, ANWAR et al as modified meets limitations of claims 13 and 51, wherein the method further comprises receiving a second zooming specification comprising one or more additional ones of said polynary string constituting symbols (column 14, lines 30-38 and 42-67); however, does not expressly teach excluding a second subset of said remaining ones of said first regions based at least in part on said received second zooming specification; and repeating said displaying for the remaining ones of said first regions. GARVEY suggests excluding a second subset of said remaining ones of said first regions based at least in part on said received second zooming specification; and repeating said displaying for the remaining ones of said first regions (column 4, lines 13-36). It would have been obvious to one skilled in the art at the time of the invention to use the computer display graphical tree analysis scheme using the expansion and contraction and zooming means with the "+" and "-" means for a subtree of GARVEY in order to modify the zooming and expansion modes for the computer-displayed decision-tree graphical analysis invention of ANWAR because the zoom manipulations of GARVEY provide greater user manipulation of the displayed data for enhanced data analysis.

24. As per claims 15 and 53, ANWAR meets limitations of claims 14 and 52, GARVEY suggests the following features ANWAR fails to expressly teach, wherein the method further comprises receiving an unzoom specification(column 4, lines 13-36- it would have been obvious to one skilled in the art that the zoom means of GARVEY possess well-known GUI means to click operations on and off); restoring the remaining ones of said first regions to re-include said excluded second subset of said first regions(column 4, lines 13-36- it would have been obvious to one skilled in the art that the zoom means of GARVEY possess well-known GUI means to click operations on and off and afterwards restore the display); and repeating said displaying for the remaining ones of said first regions (column 4, lines 13-36). It would have been obvious to one skilled in the art at the time of the invention to use the computer display graphical tree analysis scheme using the expansion and contraction and zooming means with the "+" and "-" means for a subtree of GARVEY in order to modify the zooming and expansion modes for the computer-displayed decision-tree graphical analysis invention of ANWAR because the zoom manipulations of GARVEY provide greater user manipulation of the displayed data for enhanced data analysis.

25. As per claims 16 and 54, ANWAR as modified meets limitations of claims 13 and 51, however, does not expressly teach the following features suggested by GARVEY - wherein the method further comprises receiving an unzoom specification(column 4, lines 13-36); restoring the remaining ones of said first regions to re-include said excluded first subset of said first regions(column 4, lines 13-36 - it would have been

obvious to one skilled in the art that the zoom means of GARVEY possess well-known GUI means to click operations on and off); and repeating said displaying for said first regions(column 4, lines 13-36).

As per claims 24 and 62, ANWAR meets limitations of claims 23 and 61, wherein each of said first and second normalized multi-dimensional data of said first and second normalized multi-dimensional data spaces comprises a polynary string having a plurality of symbols(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53), encoding a plurality of relative coordinate values(column 11, line 53-column 12, line 10, column 13, lines 6-16, column 16, lines 9-17 and 40-53), however,

lacks the following zoom means suggested by GARVEY comprising receiving a first zooming specification comprising one or more of said polynary string constituting symbols (column 4, lines 13-36); excluding a first subset of said first regions based at least in part on said received first zooming specification and repeating said displaying for the remaining ones of said first regions (column 4, lines 13-36); excluding a second subset of said second regions based at least part on the removed ones of said first regions and repeating said displaying for the remaining ones of said first regions (column 4, lines 13-36); and repeating said displaying for the remaining ones of said first and second regions and repeating said displaying for the remaining ones of said first regions (column 4, lines 13-36). It would have been obvious to one skilled in the art at the time of the invention to use the computer display graphical tree analysis scheme using the expansion and contraction and zooming means with the "+" and "-" means for

a subtree of GARVEY in order to modify the zooming and expansion modes for the computer-displayed decision-tree graphical analysis invention of ANWAR because the zoom manipulations of GARVEY provide greater user manipulation of the displayed data for enhanced data analysis.

Allowable Subject Matter

26. Claims 5, 9-12, 19, 27-30, 43, 47-50 and 57 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

27. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. CAID et al, US Patent No. 5,794,178 discussed within main reference. KOHAVI et al, US Patent No. 6,278,464 discussed recursion partitioning, clustering, normalization and zooming. SAHAMI et al, US Patent NO. 6,564,197 discussed centroids, vectoring, clustering and displaying of attributes. BILLHEIMER et al, US Patent No. 6,611,825 discussed mining and clustering. MIHALISIN et al, US Patent No. Re. 36,840 discussed visually fitting multivariate data.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J BLACKMAN whose telephone number is 703-305-0833. The examiner can normally be reached on FLEX SCHEDULE.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 703-308-6829. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANTHONY J BLACKMAN
Examiner
Art Unit 2676

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MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600